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The Two Kinds of Death of William Harvey

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• The determining factors in congestive heart failure as well as in shock are more often extracardiac than in the heart itself. Carbon dioxide tension in the blood is as important as the oxygen tension. Carbon dioxide is a hemodynamic agent of the first magnitude. It can be quickly increased or decreased by altering the ventilation of the lungs. It is a prime factor in determining whether the circulation fails from a lack or from suffocation by an excess.

IN THE FAMOUS DE MOTU CORDIS in 1628 William Harvey made the following statement:

"This is evidence of two kinds of death, failure from a lack, and suffocation from an excess. In these examples of both, one may find proof before his eyes of the truth spoken about the heart."

After more than three centuries we can translate this statement of Harvey into modern terms. If we apply them to the circulation, we have for "failure from a lack" all the conditions characterized by "*shock*"; while for "suffocation from an excess" we have the various forms of "congestive failure" of the circulation. The *lack* in shock is basically the lack of the volume of blood in circulation: The venous system is underfilled, the venous return is lessened, the output of the heart is thereby diminished and its contractions become rapid and weak. The "excess" in congestive failure may be applied to an excess of volume of blood in circulation: The veins are overfilled, the volume of blood in the lungs is increased, the output of the left ventricle may be high or low, depending upon circumstances which we will discuss later; but, high or low, the output of the left ventricle is less than it was before the onset of decompensation or failure and in any case is inadequate to meet metabolic demands.

Both types of failure of the circulation may occur while the heart is normal but, whether the heart is normal or abnormal, events taking place outside the heart determine whether the circulation fails from *lack* or from *excess* of effective blood volume.

We see, for instance, that when a coronary artery is occluded the patient may first exhibit evidence of *shock*. The same thing is generally true when myocarditis, such as that of diphtheria, develops. *Congestive failure*, if it follows myocardial injury, is usually a secondary event and owing to factors outside the heart, but principally operating in the lungs which, as I shall try to show you, are the site at which the type of circulatory failure is determined. You will recall that in Carl Wiggers' laboratory Levy and Berne[7] tried in many ways to produce congestive failure in experimental animals. They produced many types of injury to the heart without causing congestive failure. The only method which succeeded was that of putting a constricting band around the pulmonary artery. By this means they were able to reduce the output of the left ventricle significantly, without incurring a drastic fall in arterial pressure, and at the same time to raise the pressure in the right ventricle and the right auricle.

The right and left sides of the heart are, in a

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Guest Speaker's Address presented before the Section on General Medicine at the 81st Annual Session of the California Medical Association, Los Angeles, April 27-30, 1952.

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EDITORIAL

California Medicine Takes A New Look

IN THE PAST six and a half years an attempt has been made to develop the scientific side of CALIFORNIA MEDICINE so that it would be truly representative of the best of medicine in California. With the interest and cooperation of the Editorial Board and Editorial Office this has been accomplished to some extent. At the direction of the Council of the C.M.A. and beginning with this issue of January 1953, the organizational side of CALIFORNIA MEDICINE will be further developed to reflect as accurately as possible the official position and views of the California Medical Association on problems which vitally affect all aspects of medicine, and to report events and developments throughout the state and the country which bear significantly on the practice of medicine, on medical education, on medicine in government and government in medicine.

In the further development of the organizational side of this Journal, the Editor and the Editorial Board will welcome criticisms and helpful suggestions.

With this issue, consideration is given to two highly important problems facing the physicians of California. One of the most important issues of the day in the practice of medicine relates to the free choice of physicians by patients. We hold that the free choice of a physician by a patient is essential for the best medical care and for an adequate physician-patient relationship. To whatever extent this principle is compromised, there is likely to be proportional deterioration in medical care and, all too often, an increase in the cost of that care. Closed panel forms of practice do not permit free choice of physician and in other ways tend to cause deterioration of the best in medical care. A more complete consideration of this most important problem is noted in the editorial entitled "A Defense Against Socialized Medicine"?

So that many physicians in California may become acquainted at first hand with the very significant report of an eighteen months' study by a special committee to consider the desires of the California Medical Association in relation to C.P.S. and voluntary health insurance, there is published in this issue the full report of the Bailey Committee, given to the House of Delegates at its Interim Session in December 1952. This thought-provoking report should be discussed fully in every county medical society throughout the state, so that in May 1953, when the House of Delegates reconvenes in Los Angeles, the members of the House will be well informed of the views of their constituents and prepared to take appropriate action.

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California MEDICAL ASSOCIATION

NOTICES & REPORTS

C.M.A.-C.P.S. Study Committee Report

The following report was made December 6, 1952, by a committee appointed by the Council of the California Medical Association in accordance with a resolution passed by the House of Delegates of California Physicians' Service at its 1951 annual meeting. The purpose of the committee, as stated in the resolution, was "to ascertain the expectations of the medical profession of California in regard to C.P.S."; and the function of the committee, as set forth in the resolution, was "to make a careful study of C.P.S. as related to the operations of private insurance companies and other prepaid medical care groups, and to determine the future role and purpose of California Physicians' Service in the whole field of voluntary prepaid medicine."

The membership of the committee appointed by the Council is as follows: Wilbur Bailey, chairman, Los Angeles; James B. Graeser, vice-chairman, Oakland; Paul D. Foster, vice-chairman, Los Angeles; Alson R. Kilgore, San Francisco; Dave F. Dozier, Sacramento; Francis E. West, San Diego; J. M. de los Reyes, Los Angeles; Harold P. Tompkins, Los Angeles; Donald A. Carson, San Francisco; Gary Campbell, Santa Barbara; Henry Randel, Fresno; F. E. Clough, San Bernardino; Thomas Farthing, San Mateo; Leslie B. Magoon, San Jose; Edward C. Rosenow, Jr., Pasadena.

Mr. Rollen Waterson, executive secretary of the Alameda-Contra Costa Medical Association, served as executive secretary of the committee.

THE FIRST PORTION of our report constitutes a follow-up on the progress which has been made on the five specific recommendations in our interim report submitted to this House at the meeting held April 27-30, 1952. We shall then present further recommendations as determined during the last 18 months in some 50,000 doctor-hours of work by the 15-man committee appointed by the California Medical Association to study California Physicians' Service. Lastly, we shall present a summary.

1. *Multiplicity of Contracts.* C.P.S. now has ten basic contracts which constitute 96 per cent of those which are written. The other 32 types of contract constitute only 4 per cent. Progress is being made toward further simplification, for at the present time a collection of the various contracts is almost as thick as a telephone book. Contracts tailor-made to fit the wishes of small groups are not only confusing but are actuarially dangerous. It is hoped they will be avoided in the future.

2. *Method of Payment.* It was recommended by this committee that the previous policy be reversed, and that the patient should in the future be told how much was being paid the doctor by C.P.S., either by the method of a double-signature check such as is used by Blue Cross in its more than 500,000 accounts in Southern California, or by some other means. C.P.S. has started such a system on a very small scale in a few small communities. To date the experiment is successful.

3. *Defective Liaison Between C.P.S. and C.M.A.* The Council has up to this time appointed three of its members to the Board of Trustees of C.P.S. by way of improving the liaison between the two groups.

4. *Imperfect Communication.* More personalized methods of communicating with the doctor have been established.

5. *Blue Cross-Blue Shield Relations.* A recommendation was made most emphatically that the Council of the C.M.A. undertake to negotiate with the Boards